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EXAMINER

DAO, THUY CHAN

ART UNIT	PAPER NUMBER
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2192

MAIL DATE	DELIVERY MODE
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12/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/608,942

Applicant(s)

WOODGEARD, LARRY A.

Examiner

Thuy Dao

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-7,10-15,22-26,28-39 and 1719 is/are pending in the application.
- 4a) Of the above claim(s) 8,9,20 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,10-15,22-26,28-39 and 1719 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on October 9, 2007 has been entered.

2. Claims 1-2, 5-7, 10-15, 17-19, 22-26, and 28-39 have been examined.

Response to Amendments

3. Per Applicant's request, claims 1, 7, 13, 19, 25, and 30 have been amended; claims 8-9 and 20-21 have been canceled; and claims 31-39 have been added.

4. The objection to claim 7 is withdrawn in view of Applicants' amendments.

Response to Arguments

5. Applicant's arguments filed on have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

6. Claims 1, 5, 10, 12, 32-33, 35-36, and 38-39 are objected to because of minor informalities.

Claims 1, 5, 10, 12, and 32-33: all corresponding terms "grid node", "distributed computing software application", and "software application" should be changed to - -grid node application- - as amended in claim 1, line 2.

New claims 35-36: all corresponding terms "distributed computing software application" should be changed to - -software application- - as recited in base claim 13.

New claims 38-39: all corresponding terms "distributed computing software application" should be changed to - -software application- - as recited in base claim 25.

Appropriate correction is required.

7. Applicant added new claims 31-39 and stated "...are allowable over the cited references, for at least the reason that each depends from an allowable claim" (Remarks, page 17) without pointing out the supporting text/figure in the originally filed disclosure.

For a proper prosecution record, the examiner respectfully requests the Applicant point out the supporting text/figure for newly added claims 31-39 in the next communication with the Office.

Claim Rejections – 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 13-15, 17, 19, 22-26, 28-30, and 34-39 are rejected because the claimed invention is directed to non-statutory subject matter:

Independent claim 13 directs to "[a] system", which may comprise only software components such as "a task list editor configured to create a task list" (specification, [021], lines 4-6) and "a process engine configured to operate on the task list" ([008], lines 3-5).

Independent claim 25 also directs to "[a] system", which may comprise only software components such as "creating logic operable to create a task list" ([021], lines 4-6), "process logic responsive to the creating logic" ([008], lines 3-5).

Claims 13 and 25 amount to Functional Descriptive Material: "Data Structures" representing descriptive material per se or "Computer Programs" representing computer listings per se.

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data

structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions. See MPEP 2106.

Dependent claims 14-15, 17-19, 22-24, 26, 28-30, and 34-39 do not cure the deficiencies as noted above, thus, also amount to Functional Descriptive Material: "Data Structures" representing descriptive material per se or "Computer Programs" representing computer listings per se.

Under the principles of compact prosecution, claims 13-15, 17-19, 22-26, 28-30, and 34-39 have been examined as the Examiner anticipates the claims will be amended to obviate these 35 USC § 101 issues. For example (proposal only), - - A system, embedded in a computer readable storage medium, for automating the life cycle of a software application ... - - as similarly recited in independent claim 1.

Claim Rejections – 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-2, 5-7, 10-15, 17-19, 22-26, and 28-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle (art of record, US Patent No. 6,009,455) in view of Clinton (art of record, US Patent Publication No. 2003/0236577 A1), and further in view of US Patent Publication No. 2003/0200536 A1 to Stuefe (art made of record, hereinafter "Stuefe").

Claim 1:

Doyle discloses a system and a *computer readable storage medium having a program for automating the life cycle of a grid node application* (e.g., FIG. 2a, col.3: 42 – col.4: 10),

where the grid node application utilizes a plurality of computing resources distributed over a network (e.g., FIG. 2a-2f, idle Client Computers 11), *the program comprising:*

creating a task list which describes how at least one stage in the life cycle of the grid node application is to be performed (e.g., col.8: 1-37);

distributing the grid node application to at least one remote computing resource on the network (e.g., FIG. 2c-2f, col.4: 28-64, col.6: 17-38, col.6: 56 – col.7: 45); and

processing the task list by a process engine to perform at least one stage in the life cycle (e.g., FIG. 7, col.9: 9-67),

where a development environment is used to develop the distributed computing software application (e.g., FIG. 8a-8c, col.6: 30-55; FIG. 6, col.7: 46 – col.8: 37).

Doyle does not explicitly disclose *the process engine is integrated with the development environment*.

However, in an analogous art, Clinton further discloses *the process engine is integrated with the development environment* (e.g., application sourcecode, object scripts, script editor, script engine integrated within an IDE, [0058], [0103], [0117], [0146], [0185]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Clinton's teaching into Doyle's teaching. One would have been motivated to do so to provide a utility to design and deploy application as well as edit, insert/integrate scripts into application object runtime components as suggested by Clinton (e.g., [0058], [0185], [0012], [0103]).

Neither Doyle nor Clinton explicitly discloses *the task list includes at least one of building/packaging all files needed to execute the grid node application into a single file*.

However, in an analogous art, Stuefe further discloses *the task list includes at least one of building/packaging all files needed to execute the grid node application into a single file* (e.g., FIG. 3, [0052-0058]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Stuefe's teaching into Doyle and Clinton's teaching. One would have been motivated to do so to schedule tasks in a schedule/make file as suggested by Stuefe (e.g., [0049]).

Claim 2:

The rejection of claim 1 is incorporated. Clinton further discloses *the development environment is an integrated development environment* (e.g., [0058]).

Claim 5:

The rejection of claim 1 is incorporated. Doyle also discloses *the grid node application utilizes computing resources through service providers connected to the network* (e.g., col.3: 42 – col.4: 10).

Claim 6:

The rejection of claim 1 is incorporated. Doyle also discloses *the task list is stored in a text file* (e.g., col.8: 1-37).

Claim 7:

The rejection of claim 6 is incorporated. Doyle also discloses *the text file is an extensible markup language (XML) file* (e.g., col.9: 9-67).

Claim 10:

The rejection of claim 1 is incorporated. Doyle also discloses *the task list includes a third task, wherein the third task executes the grid node application on at least one remote computing resource* (e.g., col.9: 9-67).

Claim 11:

The rejection of claim 1 is incorporated. Doyle also discloses *the task list includes a fourth task, wherein the fourth task collects results from at least one remote computing resource* (e.g., FIG. 7, col.9: 9-67).

Claim 12:

The rejection of claim 1 is incorporated. Doyle also discloses *the task list includes a fifth task, wherein the fifth task removes the grid node application from at least one remote computing resource* (e.g., col.9: 1-8 and 36-40).

Claims 13-15 and 17-24:

Claims 13-15 and 17-24 recite the same limitations as those of claims 1-2 and 5-12, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claims, they also teach all of the limitations of claims 13-15 and 17-24.

Claims 25-26 and 28-30:

Claims 25-26 and 28-30 recite the same limitations as those of claims 1-2 and 5-12, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claims, they also teach all of the limitations of claims 25-26 and 28-30.

Claim 31 (new):

The rejection of claim 1 is incorporated. Doyle also discloses *the processing the task list further comprises: verifying that a precondition associated with a task in the task list is satisfied before performing the task* (e.g., FIG. 4, Job Computation Module 14, col.4: 48 – col.5: 35).

Claim 32 (new):

The rejection of claim 1 is incorporated. Doyle also discloses *the processing the task list further comprises: verifying that a precondition is satisfied before performing the task, wherein the precondition is associated with a task in the task list and describes requirements of the system on which the distributed computing software application executes* (e.g., FIG. 5, Parameter Lists for Job Computation, col.5: 44 – col.6: 16).

Claim 33 (new):

The rejection of claim 1 is incorporated. Doyle also discloses *the processing the task list further comprises: obtaining a description of available resources for at least a portion of the plurality of computing resources; and verifying that a precondition is satisfied before performing the task, wherein the precondition is associated with a task in the task list and describes the system requirements of the distributed computing software application* (e.g., col.7: 46 – col.8: 37; col.9: 9-40).

Claims 34-36 (new):

Claims 34-36 recite the same limitations as those of claims 31-33, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the

references teach all of the limitations of the above claims, they also teach all of the limitations of claims 34-36.

Claims 37-39 (new):

Claims 37-39 recite the same limitations as those of claims 31-33, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claims, they also teach all of the limitations of claims 37-369

11. Claims 1, 13, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,085,853 to Volkov et al. (art made of record, hereinafter "Volkov") in view of US Patent No. 6,687,735 to Logston et al. (art made of record, hereinafter "Logston") in view of Admitted Prior Art (art made of record, hereinafter "APA").

Claim 1:

Volkov discloses a system and a *computer readable storage medium having a program for automating the life cycle of a grid node application* (e.g., FIG. 2A, col.3: 28-67),

where the grid node application utilizes a plurality of computing resources distributed over a network (e.g., FIG. 2B, Available Computing Resources? YES, col.4: 1-43), *the program comprising:*

creating a task list which describes how at least one stage in the life cycle of the grid node application is to be performed (e.g., col.3: 40-55);

distributing the grid node application to at least one remote computing resource on the network (e.g., col.4: 62 – col.5: 53); *and*

processing the task list by a process engine to perform at least one stage in the life cycle (e.g., col.6: 1-12; col.5: 24-35),

where a development environment is used to develop the distributed computing software application (e.g., FIG. 3, col.5: 54 – col.6: 52).

Doyle does not explicitly disclose *the process engine is integrated with the development environment*.

However, in an analogous art, Logston further discloses *the process engine is integrated with the development environment* (e.g., FIG. 6, col.13: 27 – col.14: 15).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Logston's teaching into Volkov's teaching. One would have been motivated to do so to provides tools for generating framework, simulating applications, and/or debugging as suggested by Logston (e.g., col.13: 27-48).

Neither Volkov nor Logston explicitly discloses *the task list includes at least one of building/packaging all files needed to execute the grid node application into a single file*.

However, in an analogous art, APA further discloses *the task list includes at least one of building/packaging all files needed to execute the grid node application into a single file* (e.g., FIG. 3, blocks 201-203, Package Application, using script/task list generated by an editor, [027-031]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine AP's teaching into Volkov and Logston's teaching. One would have been motivated to do so to simplify transfer of the grid node application as suggested by APA (e.g., [022]).

Claim 13:

Claim 13 recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 13.

Claim 25:

Claim 25 recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 25.

Conclusion

12. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone is (571) 272 8570. The examiner can normally be reached on Tuesday, Thursday, and Friday from 6:00AM to 6:00PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. Dao



TUAN DAM
SUPERVISORY PATENT EXAMINER